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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,646	12/22/2003	Teresa Grocela Rocha	GE 129438	7273

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EXAMINER	
STRICKLAND, JONAS N	
ART UNIT	PAPER NUMBER
1754	

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/743,646	ROCHA ET AL.	
	Examiner	Art Unit	
	Jonas N. Strickland	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) *16-23* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 June 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5/04; 2/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-15 are, drawn to a catalyst system, classified in class 502, subclass 327.

II. Claims 16-23 are, drawn to a method for reducing NO_x, classified in class 423, subclass 239.1.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the catalyst system may be used in a materially different process that does not require a gas mixture comprised of at least 1.0% water by volume and wherein the temperature of the gas mixture is between about 300 and 600°C.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Ann M. Agosti on 5/26/05 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-15. Affirmation of this election must be made by applicant in replying to this Office action.

Claims 16-23 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okimura et al. (US Patent 5,955,046) in view of Park (US Patent 6,706,660 B2) and Kepner et al. (US Patent 6,342,191).

Okimura et al. discloses a catalytic material for removing nitrogen oxides, wherein the catalytic system is comprised of a complex oxide containing gallium, zinc, and alumina (see abstract). The zinc catalytic component comprises about at least 0-50 mol.% and the gallium catalytic component comprises about at least 0-80 mol.% (see abstract and col. 3, lines 55-62). Okimura et al. continues to disclose a methane reductant as well (col. 4, lines 50-54). Okimura et al. also discloses wherein the catalytic material may be formed into a honeycomb shape (col. 9, lines 4-10). However, Okimura et al. does not disclose a metal oxide catalyst support.

Park teaches a lean nitrogen oxide catalyst, which includes an alumina support material and promoters or catalytic dopants, such as indium, gallium, tin, cobalt, vanadium, silver and combinations thereof (see abstract).

Kepner et al. teaches a catalyst for the reduction of nitrogen oxides, which include combinations of metal oxides including zinc, silver, tungsten, tin, cobalt, as well as indium and gallium, wherein the amount of the catalytic oxide may vary (col. 20, lines 6-42). Therefore, it would have been obvious to one of ordinary skill in the art to

achieve the desired mole ratios in order to achieve a desired catalyst system for reducing nitrogen oxides.

Therefore, it would have been obvious to one of ordinary skill in the art to utilize a catalyst comprised of gallium and iridium, along with metals such as zinc, tin, and silver on a metal oxide support with respect to the teachings of Okimura et al. in view of Park, because Park teaches a lean nitrogen oxide catalyst, which includes an alumina support material and promoters or catalytic dopants, such as indium, gallium, and other catalytic metals for the reduction of nitrogen oxides and Kepner et al. teaches wherein it is known in the art to combine metal oxides, which include zinc, silver, tungsten, tin, cobalt, as well as indium and gallium, wherein the amount of the catalytic oxide may vary. Such modification would have been obvious to one of ordinary skill in the art, because one of ordinary skill in the art would have expected a process for reducing nitrogen oxides with a catalyst comprised of gallium as taught by Park and Kepner et al. to have been similarly useful and applicable to a process for reducing nitrogen oxides using a catalyst comprised of gallium as taught by Okimura et al.

Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okimura et al. (US Patent 5,955,046) in view of Park (US Patent 6,706,660 B2) and Kepner et al. (US Patent 6,342,191) as applied to claims 1-12 and 15 above, and further in view of Balmer-Millar (2003/0118960).

Applicant claims with respect to claims 13 and 14, wherein the reductant is gasoline.

The teachings of Okimura et al. in view of Park and Kepner et al. have been discussed with respect to claims 1-12 and 15. Okimura et al. discloses wherein methane may be used as a reducing agent, but is silent in regards with respect to the limitations of claims 13 and 14.

However, Balmer-Millar teaches a fuel source of a hydrocarbon base, which includes gasoline and other hydrocarbons, which include alcohols, aldehydes, and ketones (see page 2 and page 4). Furthermore, Balmer-Millar teaches a lean nitrogen oxide catalyst comprised of indium and gallium (see page 2).

Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Okimura et al. in view of Park and Kepner et al., by utilizing a reducing agent comprised of gasoline for treating nitrogen oxides, since Balmer-Millar teaches a fuel source of a hydrocarbon base, which includes gasoline and other hydrocarbons, which include alcohols, aldehydes, and ketones used for treating nitrogen oxides. Such modification would have been obvious to one of ordinary skill in the art, because one of ordinary skill in the art would have expected a process for treating nitrogen oxides in exhaust gases as taught by Balmer-Millar to have been similarly useful and applicable to a process for reducing nitrogen oxides as taught by Okimura et al. in view of Park and Kepner et al.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonas N. Strickland whose telephone number is 571-272-1359. The examiner can normally be reached on M-TH, 7:30-5:00, off 1st Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jonas N. Strickland
May 26, 2005

STANLEY S. SILVERMAN
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